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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,751

08/29/2006

Ken Igarashi

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EXAMINER

MITCHELL, DANIEL D

ART UNIT

PAPER NUMBER

2419

NOTIFICATION DATE

DELIVERY MODE

10/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/563,751	Applicant(s) IGARASHI ET AL.	
	Examiner DANIEL MITCHELL	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/6/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1, 2, 7, 11, 13, 14, 17, and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima *et al.* (U.S. Publication No. 2004/0098448 A1) hereinafter referred as Fukushima in view of Khan et al. (U.S. Publication No. 2002/0143951 A1), hereinafter referred as Khan.

Regarding claim 1, Fukushima discloses a communication system comprising: a multicast-capable router **fig. 2 element 10 multicast distribution device** including a forwarding destination holder **element 16 – multicast translation table** for holding a forwarding address to which a multicast-capable router forwards a multicast packet **par. 56 teaches address information is stored in the multicast translation table**, a forwarding destination register **[element 18 – multicast translation processor]** for registering an address of another multicast-capable router in the forwarding destination holder as the forwarding address while the address is associated with a source terminal address and a multicast group address **par. 58 teaches registering addresses**, and a router message **element 13 - multicast routing processor** provider for

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providing the source terminal address with a join request message which requests addition of the address of the multicast-capable router to a sending address to which the source terminal transmits the multicast packet **par. 53-54 teaches sending control packets to a server in order to receive data from the server.**

However Fukushima does not expressly disclose and a source terminal including a sending destination holder for holding the sending address, and a sending destination register for registering the address of the multicast-capable router in the sending destination holder as the sending address based on the join request message

Khan discloses **par. 24 and 25** a source terminal **[source server]** with a sending destination holder **[database]** and a destination register **[processor]** for processing requests made to the source terminal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fukushima to include a source server. One would be motivated as such in order to manage the addition and deletion of nodes in a multicast network **par. 25.**

Regarding claim 2, Fukushima discloses wherein the sending destination register **[processor]** registers, in the sending destination holder **[database]**, the address of the multicast-capable router located most upstream when the source terminal address is assumed to be upstream in a multicast tree **par. 24 Fukushima teaches maintaining information on all currently available nodes which can handle multicasting,**

therefore the most upstream multicast capable router is registered in its database.

Regarding claim 7, Fukushima discloses wherein the forwarding destination holder holds an address indicating a multicast address group as the forwarding address, when the multicast packet is forwarded to the multicast-capable router connecting to the same subnetwork **par. 78 teaches setting a group address as a destination address in a subnetwork with elements 50a and 40a. Fukushima discloses fig. 1 and par. 56.**

Regarding claim 11, see similar rejection as claim 1.

Regarding claim 13, see similar rejection as claim 1.

Regarding claim 14, see similar rejection as claim 2.

Regarding claim 17, see similar rejection as claim 1.

Regarding claim 18, see similar rejection as claim 2.

3. **Claims 3, 4, 5, 12, 15, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima and Khan in further view of Hundsheidt et al. (U.S. Publication No. 20020085506 A1), hereinafter referred as Hundsheidt.

Regarding claim 3, Fukushima and Khan disclose a system as to the parent claim. Khan discloses a **par. 24-25** source server that maintains a database for managing the members within a multicast group. The source server also adds and deletes information in the database according to the dynamic

behavior of multicast groups. **However Fukushima and Khan do not expressly disclose, wherein the multicast-capable router includes a judgment section for judging whether or not to be a branch router which forwards the multicast packets to the plurality of forwarding addresses when the source terminal address is assumed to be upstream in the multicast tree, the forwarding destination register registers, in the forwarding destination register, the plurality of forwarding addresses associated with the source terminal address and the multicast group address, when having judged that the multicast-capable router is to be a branch router.**

Hundsheidt **par. 74-75** discloses a multicast capable router judges that it is a branch router when it receives messages from other routers. **Par. 75** discloses that upon receiving this message the multicast capable router generates a table that identifies the members of its branches. **Par. 89** discloses a reply/request mechanism which is initiated by a server so the source is updated with the members of the dynamically changing multicast groups.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fukushima and Khan to include judging if a multicast router is a branch router. One would be motivated as such in order to efficiently synchronize network servers **par. 110.**

Regarding claim 4, Fukushima and Khan disclose a system as to the parent claim. Fukushima discloses in **par. 163** wherein the forwarding destination register

[multicast translation processor] deletes **[address deletion]** a forwarding address of the branch router located downstream from the forwarding destination holder **[multicast translation table]** based on the join/leave **[distribution request or stop distribution request]** request message from the downstream branch router, and registers **[address storage]**, in the forwarding destination holder, the address of the downstream branch router.

Regarding claim 5, Fukushima discloses in **(fig.1 an edge router [element 40a – multicast router - and par. 56-58 discloses where the destination holder includes the source address and group address])** wherein the forwarding destination register **[multicast translation processor]** registers, in the forwarding destination holder **[multicast translation table]**, the forwarding address associated with the source terminal address and the multicast group address, when the multicast-capable router is to be an edge router connecting to a destination terminal.

Regarding claim 12, see similar rejection as claim 3.

Regarding claim 15, see similar rejection as claim 3.

Regarding claim 19, see similar rejection as claim 3.

4. **Claims 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima and Khan in further view of O'Neill et al. (U.S. Publication No. 2004/0047322 A1), hereinafter referred to as O'Neill.

Regarding claim 6, Fukushima and Khan disclose a system as to the parent claim. **However Fukushima and Khan do not expressly disclose**

comprising a forwarding controller for encapsulating the multicast packet with the forwarding address when a destination address of the decapsulated multicast packet is compared with the forwarding address held by the forwarding destination holder, and the destination address is different from the forwarding address.

O'Neill discloses in **par. 72** a received encapsulated packet is decapsulated and a destination header is inspected for an address that matches and address in its routing table. The packet is then encapsulated with the new forwarding address and then transmitted.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fukushima and Khan to include encapsulating packets with a forwarding address. One would be motivated as such in order to allow a mobile host to communication with another a node in a disparate network **par. 12**.

5. **Claims 8, 9, 10, 16 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima and Khan in further view of O'Neill et al. (U.S. Publication No. 2003/0018715 A1), hereinafter referred as O'Neill.

Regarding claim 8, Fukushima and Khan disclose a system as to the parent claim. **However Fukushima and Khan do not expressly disclose comprising a forwarding controller for performing control in a manner of**

forwarding the multicast packet to the sending address before a change, when the source terminal address is changed.

O'Neil discloses **par. 38** during hand-off a source address is changed and updated in order to continue forwarding packets to a destination.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Fukushima and Khan to include encapsulating packets with a forwarding address. One would be motivated as such in order to allow a mobile host to roam while permitting network multicasting **par. 40**.

Regarding claim 9, Fukushima and Khan discloses a system as to the parent claim. **However Fukushima and Khan do not expressly disclose wherein the source terminal includes an update notification section for providing a location update message which notifies a source terminal address after a change to a destination terminal when the source terminal address is changed, and the destination terminal includes a destination terminal message provider for providing the source terminal address after the change with a join request message which requests addition of an address of the destination terminal based on the location update message.**

O'Neil discloses in **par. 98** sending a broadcast indicator with reachability information –location update- based on location from a source to a destination to

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permit roaming and multicasting and **par. 38** teaches a new join message is generated from a receiving host after a change in source address.

See similar motivation as claim 8.

Regarding claim 10, Fukushima and Khan disclose a system as to the parent claim. **However Fukushima and Khan do not expressly disclose wherein the forwarding destination register registers an address in the forwarding destination holder based on the join request message from the destination terminal or the multicast-capable router.**

O'Neil discloses **par. 38** discloses routing state within the multicast element is updated after sending a new join request in response to a changed source address.

See similar motivation as claim 8.

Regarding claim 16, see similar rejection as claim 9.

Regarding claim 20, see similar rejection as claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MITCHELL whose telephone number is (571)270-5307. The examiner can normally be reached on Monday - Friday 8:00 am - 5:00 pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shah G. Chirag can be reached on 571-272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. M./
Examiner, Art Unit 2419

/Chirag G Shah/
Supervisory Patent Examiner, Art Unit 2419